

# Chromalox®

## Installation, Operation and Maintenance Instructions

### SERVICE REFERENCE

DIVISION 4	SECTION PTHF
SALES REFERENCE (Supersedes PD438-1)	PD438-2
161-620127-001	
DATE	AUGUST, 1998

## Type PTHF Over-the-Side Immersion Heater

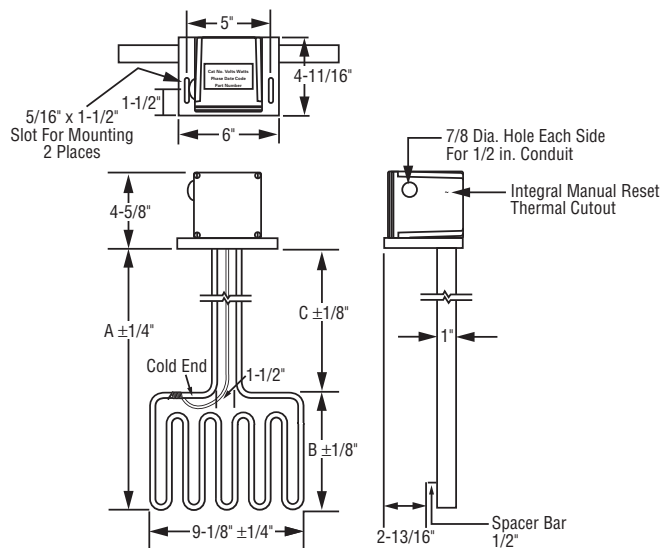


Figure 1

### Specifications

Model Number	Volts	Phase	kW	Dimensions (In.)			Approx. Weight (Lbs.)
				A	B	C	
PTHF-302	240	1 or 3	3	16	7	9	7
PTHF-304	480	1 or 3	3	16	7	9	7
PTHF-402	240	1 or 3	4	18	9	9	8
PTHF-404	480	1 or 3	4	18	9	9	8
PTHF-602	240	3	6	22	13	9	9
PTHF-604	480	3	6	22	13	9	9
PTHF-802	240	3	8	27	18	9	10
PTHF-804	480	3	8	27	18	9	10
PTHF-1002	240	3	10	31	22	9	11
PTHF-1004	480	3	10	31	22	9	11

B Dimension is heated section. C Dimension is cold section.  
Note: "XX" after model number denotes special dimensions.

### GENERAL

**WARNING: This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present as defined in the National Electrical Code. Failure to comply can result in explosion or fire.**

Chromalox type PTHF over-the-side immersion heaters are especially suited for heating corrosive solutions to 212°F.

**WARNING: It is the responsibility of the purchaser of the heater to make the ultimate choice of sheath material based upon his knowledge of the chemical composition of the corrosive solution, character of the materials entering the solution, and controls which he maintains on the process. Chromalox cannot warrant any electric immersion heater against failure by sheath corrosion if such failure is the result of operating beyond our control.**

- Heater Construction Characteristics
  - High quality resistance wire held in place by compacted magnesium oxide in stainless steel sheath.
  - Medium Watt Density.
  - Light weight and low profile.
  - Manual rest cutout to shut off heater in an overtemperature condition is standard.

**WARNING: Users should install adequate controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.**

### INSTALLATION

**WARNING: Hazard of Electrical Shock. Disconnect all power before installing heater.**

- WARNING: Do not scrape or scratch thermal cutout capillary on heating elements. Damage could result.**
- Before installing the type PTHF heater, inspect it for possible damage which may have occurred during shipment. Also, check to insure the line voltage is the same as that on the nameplate.

- WARNING: Mount heater in the tank so the liquid level will always be above the effective heated portion of the heater. If heater is not properly submerged, it will overheat and damage the heating elements and create a possible fire due to excessive sheath temperature.**
- In an electroplating operation the heaters are not, under any circumstance, to be placed between the electrodes and the work.

## INSTALLATION

5. **DANGER: Hazard of Fire.** Since these heaters are capable of developing high temperatures, care should be taken to

maintain liquid level above heated portion (dimension B of Figure 1) of heater.

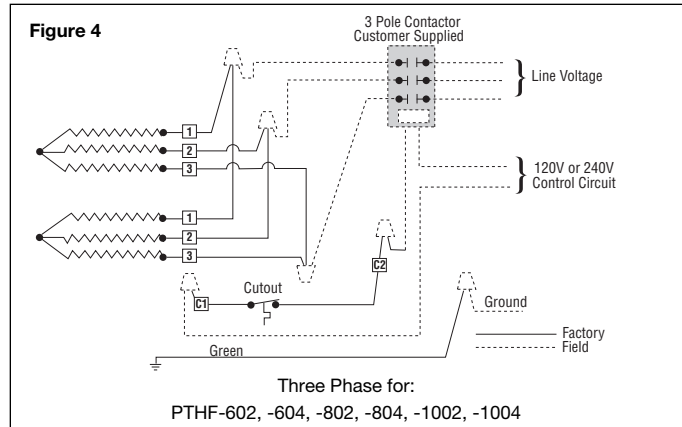
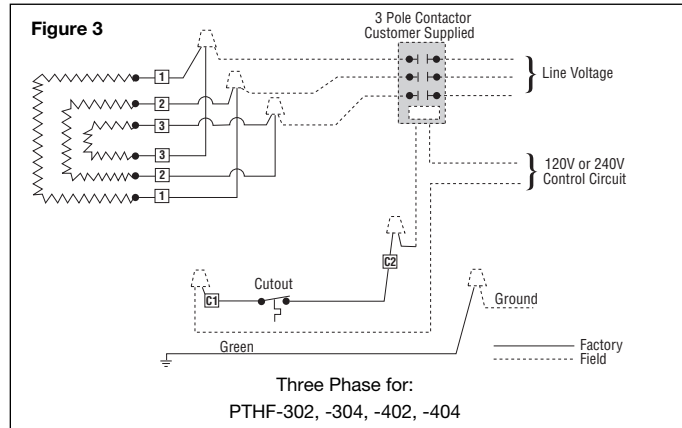
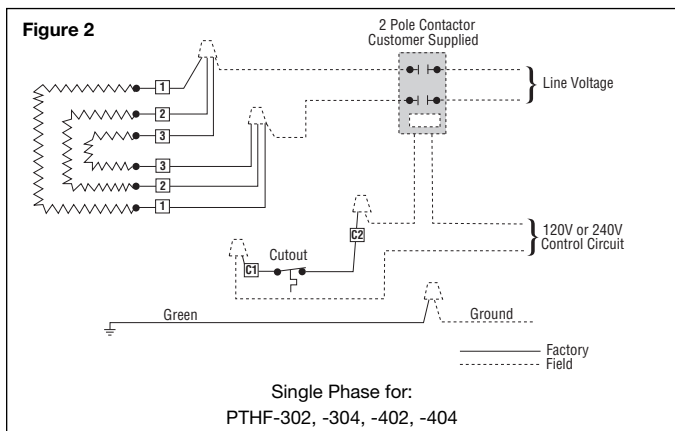
## WIRING

**WARNING: Hazard of Electric Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.**

1. Electrical wiring to heater must be installed in accordance with the National Electrical Code and local electric codes by a qualified person. **WARNING: Use copper conductors only.**
2. Wire heater with manual reset thermal cutout as shown in Figures 2 thru 4.

**Note:**

1. Manual reset thermal cutout rating 25 amps 120-277 Vac.
2. Customer supplied thermostat/liquid level control wiring not shown.



## OPERATION

1. Do not operate heater at voltages in excess of that stamped on the heater since excess voltage will shorten heater life.
2. **Always maintain a minimum of 2"** of solution above the heater portion of the element to prevent exposure of the effective heated length. If the heater is not properly submerged, it may overheat and shorten heater life. *Do not operate heater if dry.* (Note: Heated portion of element is Dimension B of Figure 1).
3. Sludge should not be allowed to build-up to the point where it contacts heater as this can lead to premature heater failure.
4. Maximum recommended process temperature is 212°F.
5. If manual reset cutout trips, disconnect power to heater and check for cause of overheat condition. Correct condition, then remove heater terminal cover and push black reset button to reset the cutout. Assemble terminal cover before re-energizing heater.

## MAINTENANCE

**WARNING: Hazard of Severe Shock. Disconnect all power to heater before servicing or replacing heaters.**

1. Heaters should be checked periodically for corrosion buildup and cleaned if necessary.
2. Tank should be checked regularly for sediment around the end of heater as this sediment can act as an insulation and shorten heater life.
3. **WARNING: Do not scratch or scrape thermal cutout capillary when cleaning. Cleaning should be done chemically.**

**Limited Warranty:**

Please refer to the Chromalox limited warranty applicable to this product at <http://www.chromalox.com/customer-service/policies/termsforsale.aspx>.